

SULLY'S HILL NATIONAL GAME PRESERVE
NARRATIVE REPORT - 1968

INCLUDES LAKE ALICE EASEMENT REFUGE
NARRATIVE REPORT -1968

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

NARRATIVE REPORT FOR
SULLYS HILL NATIONAL GAME PRESERVE
FORT TOTTEN, NORTH DAKOTA
AND
EASEMENT REFUGES OF DISTRICT NO. 2

CALENDAR YEAR 1968

Refuge Manager (GS 9)	David L. Gilbert
Wildlife Technician (GS 5)	Irvin A. Nelson
Painter-Maintenance (Uncl)	Louis E. Zieman
(Temp. May 1 - Sep. 25)	

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SULLYS HILL NATIONAL WILDLIFE REFUGE

BENSON COUNTY, NORTH DAKOTA

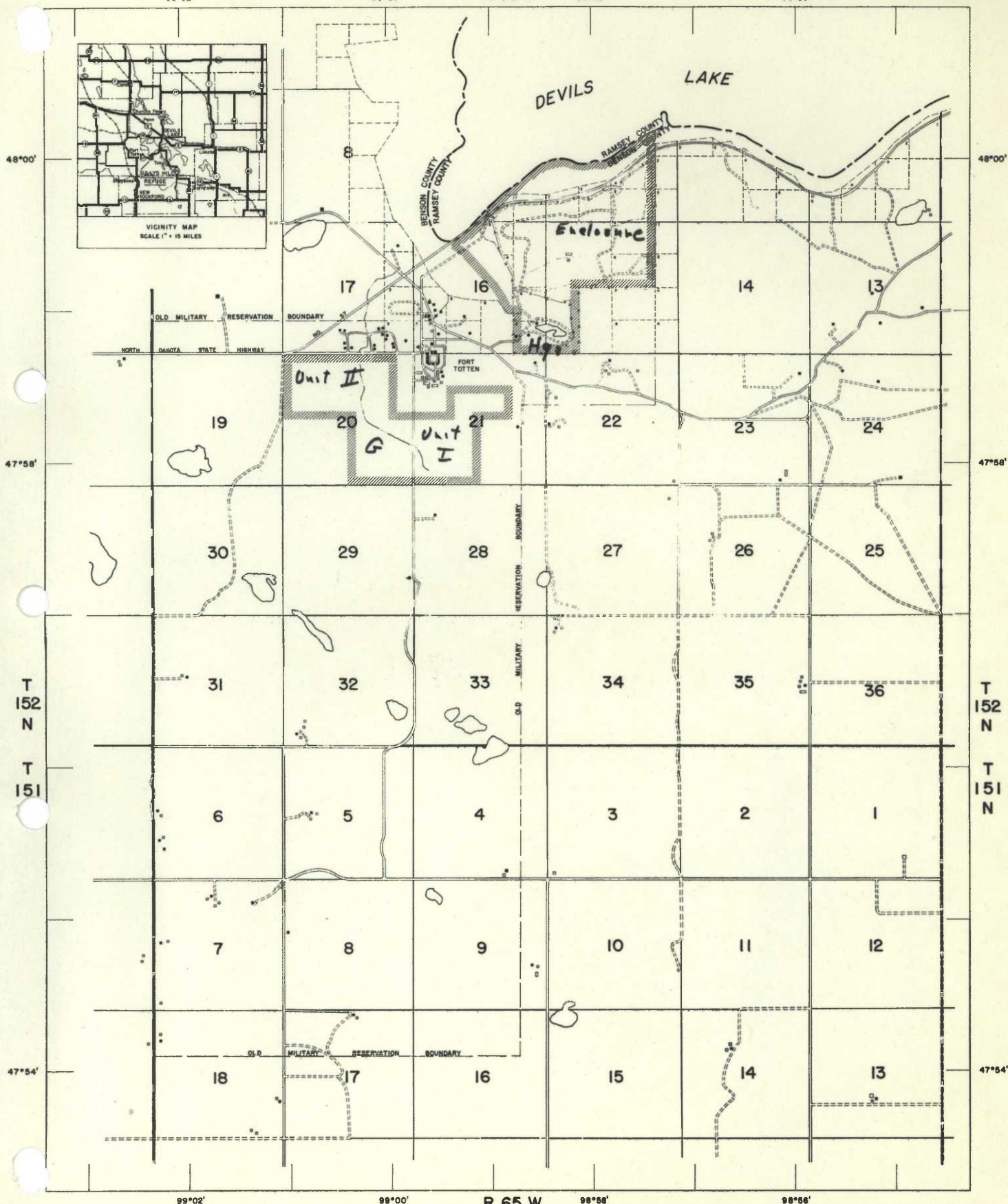
UNITED STATES
DEPARTMENT OF THE INTERIOR
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FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
98°56'



COMPILED IN THE BRANCH OF ENGINEERING
FROM SURVEYS BY G.L.O. AND B.S.F.W.

MINNEAPOLIS, MINNESOTA

DECEMBER, 1959

FIFTH PRINCIPAL MERIDIAN



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
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TOWNSHIP
DIAGRAM



MEAN
DECLINATION
1955

I. General

A. Description of the Area

The 1674 acre preserve is mainly large wooded terminal moraine hills, located on the south shore of Devils Lake, in NE North Dakota. The largest of the hills was named for Gen. Alfred Sully, who led a campaign against the Sioux in 1865.

1968 public use totaled 24,500 visits. Primary uses are picnicing and driving the auto tour through the 700 acre enclosure. Summer big game herds are 40 Bison, 30 Elk, 30 W-t deer. The 60 acre rec area contains a 12 acre lake, displaying breeding semi-captive Canada geese, wild ducks (incl Wood ducks), and a variety of water birds. Non-breeding Snow & Blue geese and Whistling swans are also displayed.

The area, established as a national park in 1904, is rich in Indian and early military history. Several burial mounds on the preserve are thought to be over 600 years old. What is now our big game pasture provided logs and clay bricks for the building of Fort Totten (one mile west).

Also administered from the preserve are 12 easement refuges, in several surrounding counties, totaling 28,000 acres. These function in duck production and molting, and goose and duck migration. Best known is "Lac Aux Mortes", a goose hunters paradise locally called Lake Alice.

B. Weather

1968 weather was generally dry, significant after the extremely dry 1967. Jan through July moisture was 25% below normal. 4.15" rain in Aug. brought annual total near normal. Temperatures were near normal. Most significant departure from normal was March, with mean average temperature 10° above normal. Other months were within 4° of normal.

Ants appeared at hqs Mar. 15 (61°), but were driven back by intermittent snows until Apr. 21, when the last inch fell. The last heavy frost occurred May 8. Light frosts continued through late May.

The first heavy fall frost came Sep. 6, doing very little damage. No single killing frost was noted as fall weather gradually came on. The first freezing temperature recorded was 21° Oct. 4. First snow was 6", Nov. 16.

1968 Weather Summary (Radio KDLR, Devils Lake)

	Temperature					Precipitation		
	Max	Ave max	Min	Ave min	Mean ave	Prec.	Snow	Normal prec.
Jan	41	15	-35	-4	5.2	.29	4.8	.53
Feb	40	19	-26	-1	8.9	.13	1.6	.65
Mar	61	42	-4	21	32	.73	5.5	.77
Apr	81	13th rec. 55	11	30	42	1.43	2.8	1.15
May	82	63	20	39	51	2.18	T	2.11
Jun	99	73	42	51	62	2.00	-	3.36
Jul	90	81	40	54	68	1.58		2.57
Aug	87	76	33	14th 52	64	4.15		2.18
Sep	86	69	34	46	57	2.03		1.70
Oct	75	56	21	4th 33	45	.42	T	1.07
Nov	54	38	11	22	30	.45	5.7	.68
Dec	36	15	-28	0	8	.25	4.3	.52
						15.64	24.7	17.29

C. Habitat Conditions

1. Water. Potholes were filling from runoff by March 15. Lakes began thawing April 1. All ice gone from Sweetwater Lake April 11, Devils Lake April 17.

Potholes remained poor. Most were dry from 1967, water quickly seeped away when frost went out. Heavy August rains added little water, but saturated the ground, improving the prospects for 1969.

The dry year provided excellent opportunity for field drainage. Many farmers have equipment, and are draining wetlands at an ever increasing rate, despite the lack of federal aid.

Sweetwater and most other lakes froze over Nov. 7. Devils Lake remained open in the center. By Nov. 13 only a few patches of open water remained in the largest lakes.

2. Food & Cover. Frost began going out and first green shoots appeared the last week in March. Snow was gone and hills showed first green cast April 10. Farm field work was noted April 27. By May 1 trees were in bloom, Aspens leafing out.

Blue and Brome grass were setting seed June 5. By July 10 the hills were brown, annuals were seeded and dying, needlegrass seeded. Meadows were green, but needing moisture - received abundantly in August.

Totally, range conditions in the enclosure were excellent through the year. Of special note was the large amount of Bearded wheatgrass producing seed, both on and off the preserve. Green needle and Prairie sand reed also reproduced very well. Late season grasses (Big & Little bluestem, etc.) produced very few seed stalks except along road sides where mowed. The only B. bluestem seed noted on the preserve was along mowed roadside outside enclosure gate. The mowed road ditch between units I and II contained seeding B. & L. bluestem, Switchgrass, and Sideoats gramma. No Indiangrass was seen.

Our 160 acre Grazing unit remains in poor condition, primarily Kentucky bluegrass, with heavy Buckbrush infestation. It was grazed heavily at the 100 AUM rate used in the past, with plans to interseed native grasses in the fall. This plan was changed.

Additional inquiry indicated poor results on other areas when interseeding on sod with the non-scalping drill we have available. Inspections of rotation grazing and planned burying on other areas revealed a much higher remnant population of native grasses in bluegrass, brome, brush stands than suspected prior to application of management techniques. Closer inspection revealed remnants in our G-unit, including Bearded wheatgrass, Western wheatgrass, L. bluestem, Green needle, Prairie junegrass.

Present plans include spring burning, followed by rest from grazing.

A dam-dugout was partially completed in the G-unit prior to freezeup. We plan eventually to divert Bison grazing to units I & II, mainly to improve visibility to our visitors. Barriers to this proposal are cost of big game fencing, need for more land or travel lane across non-refuge land from present enclosure.

About 15 acres of Buckbrush was mowed in the enclosure. Fair results have been obtained with mowing at several year intervals, with a small amount mowed each year.

Buffaloberry production was very high in 1968, as was Chokecherry. Juneberry production was very low, and Oak (Bur) mast non-existent.

II. Wildlife

A. Migratory Bird Arrival Dates (first seen)

3/3	30 Horned larks, S. of refuge
3/7	15 Eve grossbeaks, hqs, 300 Can. geese, L. Alice
3/8	1 Crow, corral
3/17	Ducks, Kirck's refuge
3/18	Pintails, L. Alice, 18 Mallards, W. Ft. Totten Meadowlarks 40 Crows, Hwy 281
3/21	1 Bluebird, hqs (not seen after 3/23, snow on)
3/25	
& 26	S & B and Canada geese coming in R-w blackbirds on territories
3/27	Whitefronts flying over
3/29	1 Robin
3/30	1 R-b gull, Devils Lake
4/1	Scaup & Ringneck, L. Alice, R-t hawk, Sparrow h., Sullys Hill
4/2	100 S-c juncos, hqs
4/8-9	All spp geese flying in high
4/12	W. swans, Gadwalls, Devils L.

4/17 Redheads, Baldpates, Shovellers, Devils L.
 4/19 100 Coots, 15 Pelicans, 3 P-b grebes, L. Alice
 4/20 Killdeer
 4/21 10,000 S & B geese, Sweetwater, Dry, Chain Lakes
 4/22 40 Robins, hqs
 4/25 M. doves
 4/29 8000 S & B, 2000 Canada geese, L. Irvine
 1 Bufflehead, 1 Com tern, 1 Franklins gull, L. Alice
 4/30 Unid warbler heard, hqs
 5/8 200 Y-h blackbirds, L. Alice
 5/10 Eared grebes, Silver L.
 25 Avocets, 20 M. godwits, 10 Can. back, 5 R. neck, 30 BWT, 10 Gadwalls
 Snyder L.
 5/17 Veery, thrushes, Sullys Hill
 5/18 Yel. warbler, House wren, Hqs
 5/20 B-c-n heron, S.W. lake
 6/2 Goldfinches
 6/6 10 Nighthawks, hqs (not seen after 6/8)
 9/18 50 S-h cranes, L. Alice

B. Waterfowl

1. Geese. The captive goose flock consisted of 24 Canadas, 5 Snow & Blue, 1 W. swan, 1 Mallard when released on Sweetwater Lake, March 26. Reproduction was poor. Two of the Large Canadas were incubating April 10. One was still sitting on the eggs into June. At least 5 females attempted to nest. Three broods (11 young) hatched from May 10 to June 11. 8 goslings survived. One was found dead one Monday morning, apparently foundered from being fed by picnickers. Chief cause of low reproductive success was probably frozen eggs. We plan to keep the geese in the wintering pen until after April 1 next year.

Seven of the young Canadas disappeared during the fall. They were either harvested by hunters, or, hopefully, migrated.

Three crippled swans were brought in during the hunting season (no season on W. swans). One of these died.

When returned to the hqs wintering pen the flock totaled 25 Canadas, 4 Snow & Blue, 3 W. swans.

The first migrant geese were 300 Canadas reported at Lake Alice, March 7. An influx of Snows & Blues and Canadas was noted March 25 & 26. First Whitefronts noted were a small flock over hqs, March 27. Another influx of all goose species was noted April 8 & 9. Apparently geese (and ducks) became confused during bad weather, April 1, returned to Sand Lake NWR, South Dakota. According to news media, Sand Lake reported 250,000 geese April 5.

Fall migration began with 15 L. Canadas seen at L. Alice, September 10. Peak population occurred in late October, declining rapidly after Nov. 1. 65,500 geese (9300 Canadas, 56,200 S & B) were counted 10/22, when J. Pospichal made an aerial census of primary lakes in the general area. Another census, Nov. 7, indicated 15,000 geese remaining.

Hunting was generally poor, although, as always, some parties had very good success on some days. Weather was too good, geese and ducks passed through without spectacular buildups. Feeding and concentration areas were constantly changing.

2. Ducks. Ducks began arriving in the general area March 17. First arrivals at Sullys Hill were 4 Mallards March 30. Migration buildup began the week of April 20, peaked April 27. Nearly all migrants had departed by May 18.

Mallard pairs used all potholes in the enclosure woods again this year. Five Mallard broods were observed, totalling 38 young (ave. 7.6). No BWT broods were seen this year. One group of 6 Wood ducks was thought to be a brood which had reached flight age before being observed.

Dabbler numbers began to increase after August 1, divers August 25. No significant peaks were noted during the fall. Nearly all were gone from Sullys Hill by November 1.

The 20 mile Brood Chronology Survey was run from Ft. Totten to Warwick again in 1968. The route includes 60 water areas; basins total 445 acres.

445 acres.			Broods seen		Cor. for visibility			Young	Cor.
Water area			Dabblers	Divers	Dab	Div	Total	Coots seen	Total Young
1967	7/13	352 A.	10	5	22	6	28	83	153
	8/16		21	8	32	9	41	45	88
							<u>69</u>		<u>241</u>
1968	7/17	265	12	7	34	11	45	28	78
	8/16		6	-	10	-	10	21	36
							<u>55</u>		<u>114</u>

3. Whistling Swans. The Ft. Totten bay of Devils Lake, adjacent to Highway 57, is a favorite loafing and feeding spot for migrating swans. Three swans appeared April 12, increasing to 40 on April 25. The last spring swans were 12 on May 10.

Fall migrants were first recorded and peaked at 150, September 28. 60 birds remained through October 11.

C. Upland Birds

Sharptailed grouse populations appear moderate, but stable in the general area. None were observed on the preserve in 1968.

One brood of Gray partridge was seen July 15 during hay cutting in Unit II. A covey of 9 birds was observed at the enclosure entrance October 22.

No pheasants were seen during the year. An occasional sighting is reported around the area.

D. Predatious Birds

Two Bald eagles used the preserve briefly, observed Nov. 22 along Hwy 57. No Golden eagles were seen in 1968.

Hawks seen during the year included Red tailed, Marsh, Sparrow hawks.

Great horned and Screech owls are heard nightly during the summer, G-h owls year around. No Snowy owls were observed. Short ears are common, but were not seen on the preserve.

The first Crow arrival was noted March 8. A flock of 40 was noted along Hwy 281, March 18. An estimated 6 pair nested on the preserve. Two wintering crows were present at the corral December 31.

Magpies are year around residents, seldom seen in summer. Up to 15 are frequently observed in the fall, during animal disposal.

E. Other Birds

A variety of water birds used Sweetwater lake in the recreation area, encouraged by the addition of 1500 minnows from the Sheyenne river. Included were Franklins and Ring-billed gulls, Black and Common tern, B-c night herons, G-blue herons, D-c cormorants, Kingfishers, Yellow-legs.

One E. bluebird was observed, at hqs 3/21-23, while snow was still on. 100 S-c juncos visited hqs 4/2. 10 Nighthawks congregated around hqs for a couple of days June 6. Flocks of Eve. grossbeaks, Boh. and Cedar waxwings, ranging from 6 to 50 birds, were periodically seen during the year.

The Christmas count was made Dec. 24. Vic Hall and Jim Heinecke (Devils L. W.O.) participated along with manager Gilbert. Temperature ranged from -10° to -15°, with 6" snow cover. 15 species were observed, totaling 391 birds.

1968 Christmas count

<u>On refuge</u>		<u>Off refuge</u>	
Hairy woodpecker	1	S-t grouse	16
Blue jay	4	Gray partridge	12
Magpie	3	Horned lark	1
Crow	2	Blue jay	5
W-b nuthatch (H)	2	Magpie	2
House sparrow	26	Boh. waxwing	110
Eve. grossbeak	9	N. shrike	2
	<u>47</u>	Rusty blackbird	16
		Com. redpoll	140
		Snow bunting	40
			<u>344</u>

Also seen during count period were B-c chickadee and S-eared owl.

F. Big Game

1. Bison. Herd Status.

	<u>Bulls</u>					<u>Cows</u>			
	Mature	2 yr	1 yr	calves		Mature	2 yr	1 yr	calves
Spr 68	2	1	3			13	6	3	
Births				8					3
Removed				-1		-7			
Dec 68	2	1	3	7		6	6	3	3
		↓	↓	↓			↓	↓	↓
Spr 69	3	3	7			12	3	3	

Beginning the period the herd totaled 28 animals. Five calves were born April 18-19. On May 1, calves totaled at least 7. Birth date of another two calves is not known. On July 15 another 2 very young calves were discovered, bring the total to 11. A two year heifer had one of the two late calves.

Herd productivity, based on 13 mature cows was 85%; including only the 10 calves actually born to mature cows, 77%.

The second late calf was born to a cow estimated at about 13 years. After being sick for about 10 days, she died Sep. 6. Subsequent posting by Dr. Pearson, NFWRC, did not reveal specific cause of death. Within a short time, there was a striking contrast between the growth of the calf which lost its mother and the other, born at the same time. By mid-Dec. its weight was a fraction of that of the other calf, still nursing. The runt calf died Dec. 26, after the first siege of -30° weather.

Six mature cows were butchered during the fall disposal, in keeping with plans to increase the number of bulls and total herd size somewhat. Light range utilization and increasing hay production on the improved hayland indicate more animals can be supported. Increasing bull numbers will provide a more natural sex ratio and, hopefully, create a more or less separate bull herd during part of the year. This in turn will improve visitor chances of seeing the bison. Previous management has provided for one herd bull, frequently rotated, as a precaution against inbreeding complications. Investigation has disclosed no inbreeding problems, even in the very small herds scattered around the country.

Dressed weights for 5 of the 6 cows ranged from 448 to 496 lbs, averaging 472. Ave. live weight is estimated at 875 lbs. (Based on 26 females, age 3-13, ave. dressed weight 467, dressing out at 54% average. Natl Bison Range, 1965).

Grain cubes for supplemental winter feed were made by Nokota Feeds, Devils Lake, in October:

Purina range concentrate	1300 lbs	@	5.70	74.10
Vitamin D add.	3 $\frac{1}{2}$.25	.88
Vit. A	7		1.00	7.00
Molasses	372		3.50/c	13.02
Pelleting w/refuge grain (2790				
lbs barley, 2720 lbs oats-corn) 7200			6.00/T	21.60
Delivery				5.40
				<u>122.00</u>

About 100 lbs cubes are put out three times a week along with hay feeding.

2. Elk. Herd Status.

	Mature bulls	1 yr bulls	Mature cows	1 yr cows	Calves
Spr.68	2 (5 & 8)	4	13	1	
Births					10
Removed		-4	-4		
Dec.68	2	-	9	1	10

The year began with 20 elk; ended with 22. Time of birth of the 10 calves is unknown. As usual, the elk herd split up from calving time until fall. Our first total calf count was September 2.

The 10 calves was a station record for the species. Productivity was 77% of cows 1 year and older.

Our 5 year bull carried the full complement of 6 points in 1968; had 5 in 1966 & 67. Both bulls carried their racks into April again this year. The 8 year bull had shed antlers April 8, the younger bull about April 20.

In addition to the disposal, one cow was lost during the fall. She was not found. It is possible this cow was one we thought we "missed" during the disposal. An attempted lung shot was thought to have been intercepted by a tree. The cow gave no indication of being hit, but was tracked with the herd for some distance as a precaution.

3. White tailed deer.

We entered the year with approximately 20 deer in the enclosure. Reproduction was estimated at 8.

Remains of one adult carcass were found May 9. Three bucks, 2 does were donated to the Deaf School, Devils Lake, during the fall.

On an aerial census, 1/8/69, 24 deer were seen in the enclosure. Up to 16 have since been seen during hay feeding at the corral.

On two occasions during the summer, dogs were observed chasing deer through the hqs. We were lucky enough to shoot 2 of the three dogs each time.

G. Fur Animals

No weasels were noted during the year.

Mink appear to be increasing. About 10 sightings were recorded on Sweetwater and Devils Lake shores.

No Norway rats or sign noted.

Rabbits continue to be scarce on the refuge. An estimated 10 Cotton-tails were seen during the year; no Snowshoes or Jacks. Jackrabbits do seem to be increasing somewhat in the general area.

Fox squirrels seem to outnumber the Grays this winter. In recent years the reverse has been true. Five fox squirrels were observed in Jan. 69, feeding on Ash seeds at hqs.

Two families of Woodchucks lived under a hqs building during the summer, causing considerable problem in gardens. Seven of the 9 Woodchucks were live trapped and transported to the enclosure. Another 2 or three were observed in the hqs area.

Raccoons continue in abundance. Because of their nocturnal habits they are seldom seen by our visitors, but reduced goose and duck nesting success around Sweetwater lake to zero. They are also a considerable nuisance in stringing trash around the rec area. About 8 animals were trapped at hqs during the summer.

Red Foxes are common in the enclosure; present population estimated at five. They are occasionally seen by visitors and do little damage, except for denning in the burial mounds. We plan to try more work with moth balls or other repellents to prevent this.

No Gray foxes were seen during the year.

No beaver or muskrat occurred on the refuge.

No skunks or badgers were seen.

H. Fish

Summer employee Zieman stocked Sweetwater Lake with 1500 minnows from the Sheyenne river last spring. Recent studies indicating minnows compete with ducklings for food may cause us to take another look at this practice. We have added minnows to encourage water birds to use the lake in our rec area.

I. Disease

No Botulism or other disease outbreaks occurred in 1968. All butchered animals of all three species were blood tested for Brucellosis. All were negative.

III. Development and Maintenance

Headquarters. A new garage was constructed at Q-2. The force account structure was built to engineering drawings, using redi-mix concrete for foundation and floor. Summer employee Zieman was chief carpenter. Cost of the 16' x 26' garage is estimated at \$1500.

Water was added to office-shop building, and bathroom installed. Sewer was hooked up to septic of former Q-1, 75' north. We hated to give up precious space for the installation, but it was necessary, especially considering WPCA (Water Pollution Control Administration) view of our outdoor privy. A hydrant was added between the shop and goose house. All excavation and sewer plumbing was contracted to Goodman Elec, Devils Lake, for \$247.00. Refuge personnel installed water line and fixtures and backfilled. Clay hardpan too hard for the backhoe was struck as shallow as 5½' on part of the water line excavation. The plastic pipe at this point was covered with 1" styrofoam, 1' wide, and covered to a depth of 6'.

A concrete step was added at the front door of the office-shop, and about 15' of walk added at the back. The old, sloping extension of the footing outside the front door was a real hazard, especially when covered with ice. Likewise, the "stumbling blocks" in back. Eves troughs were added over the doors.

An electric gas pump was acquired from excess, replacing our 30+ year old hand crank model. This winter, the underground line broke, requiring operation from an extension cord. We will probably replace the aluminum conductor with copper next summer.

Percolation rate tests were made in preparation for installation of a new hqs soil absorbtion system, now budgeted for F.Y. 70. Parts of our present systems were rightly condemned by WPCA last summer.

Recreation Area. WPCA inspection made us take a new look at our rec area sanitary facilities. As a result, four of our 5 pitless pit toilets were eliminated. The other was relocated, pit added, and partition added for use by both men and women. While still not meeting WPCA standards, the situation is improved. The men's flush toilet was re-activated, with stools transplanted from the 6 "stall" womens facility. The other women's toilet was partitioned for use by both sexes.

A main information board was added at rec area entrance. Two additional photo boards were added on Sweetwater lake, in the main picnic area and along the visitor route.

Numerous trees were removed from the rec area and tour route, usually after being blown down across a trail. Two BIA Gen Assistance men have done considerable removal of other dead and down trees in rec area this winter.

Tour route. Part of refuge roads were gravelled during the summer. The overlook loop received additional clearing and gravel. More work is needed.

Several new tour signs were added, and old ones maintained. The small signs are vulnerable to damage from bison rubbing.

Chain barriers were added on some off road trails in the enclosure and rec area.

Other work. The corral received considerable maintenance and some improvement prior to vaccination in the fall. The handling chutes, etc, are badly in need of replacement and re-design.

Numerous breaks in the fence around Unit II were repaired. Several of these were caused by vehicle trespass, by cutting or just driving through. The fence along the north side was rebuilt by BIA, using our posts and wire, after they widened the road. The old fence they took out was just barely a fence.

In contrast to our problems with the barbed wire fences, our 7 ft, #9 woven wire enclosure fence has been virtually maintenance free since installation in about 1918. It's still good. This may be worth some more thought on our permanent areas.

A combination dugout-dam was partially completed in the G-unit prior to freeze-up.

177 Belrose Wood duck boxes were made in refuge shop during the winter by our NYC's. They were turned over to Arrowwood NWR and NFWRC, Jamestown. About 80 funnel duck nests were made for WPA's.

Refuge personnel assisted wetland manager Hall with some fencing and dam work on WPA's.

B. Fires. A few grass fires occurred in the Ft. Totten area in late April and early May. Refuge personnel assisted Bureau of Indian Affairs crew on a fire outside refuge entrance April 28. A trespass beer party started a fire in the south Unit II shelterbelt May 5. It was extinguished in one hour with refuge Dri-Bak unit. None of the usual fall fires occurred.

IV Resource management.

A. Grazing. The 160 acre G-unit was used by Marvin Jabs again in 1968, 100 AUM's @ \$2.45.

B. Haying. 80 acres of alfalfa-brome in Unit I was put up by Harold Belcher. The refuge share (1/3) was 14 tons, delivered to enclosure corral. Unit III was hayed by Howard Jabs and Bjerne Knutson. Total yield of the several hay types was 168 tons, refuge share 56 tons. Howard Jabs cut 25 3/4 tons of wild hay in the meadow near hqs. Receipts were \$90.00 (3.50/ton).

C. Farming. 30 acres in Unit II was planted to barley by hay permittees. Yield was 40 bu/acre. Refuge share is being used for goose feed and big game cubes.

D. Animal Disposal.

Elk

10/4	1	1 yr M	Kensal Methodist Men		\$90.00
10/23	1	1 yr M	Bottineau W.L. Fed.		90.00
	1	F	Munich Comm. Club		90.00
11/1	1	1 yr M	Devils Lake Elks	302 lbs	90.00
	$\frac{1}{2}$	1 yr M	Frond Forks W.L. Fed.	262	45.00
	$\frac{1}{2}$		Warwick Gun Club		45.00
11/19	1	1 yr M	Lehr W.L. Club		90.00
11/20	1	F	Harlow, Fish L. Club		90.00
	<u>7</u>				<u>630.00</u>

Bison

10/23	1	F	Esmond, Buffalo L. Club	470 lbs	\$120.00
	1		Bottineau W.L. Fed.		120.00
	1	F	Minot K.C.	496	240.00
	1	F	Munich Comm Club	470	120.00
	1		Lakota W.L. Fed.		120.00
11/1	1	F	Valley City Lions	448	240.00
	1	F	Brookings, S.D., SDSU	474	240.00
11/19	1	F	Wolford W.L. Club		240.00
	<u>6</u>			ave 472	<u>1440.00</u>

D. Fur harvest. None.

V Public Relations

A. Recreational uses. Total refuge visits were 24,500, up about 20% from 1967. Visits were somewhat better distributed than last year, but still poor. Peak use was a much overcrowded 2,000 people on July 4, and 1,600 on July 29 (Ft. Totten Days). Other would be picnickers gave up on these dates. Rec area development is adequate for normal peak loads, however.

A more serious problem exists in the enclosure. Even normal peak loads invariably push animals back into the timber. Transfer of the bison herd to open land in unit II will provide much better visitor opportunity for viewing. We hope to begin big game fencing there in F.Y. 1971.

Public Use Summary, 1968

	May	June	July	August	September	October	November
Visits	2285	3800	10,600	3600	2700	750	110
Peak Day	380	800	2,000	800	360	160	50

B. Refuge Visitors. Frequent visitors included Vic Hall, Jim Heinecke - Devils Lake W.O., GMA Vic Blazevic, and Ft. Totten personnel with BIA and OEO.

Other Visitors: .

Date	Name	Purpose
1/17	Mssrs. Peppinger, Royer, BIA, Aberdeen	Fire control coordination
2/6	Archie Borstad, OEO	NYC program
3/27-8	Marv Duncan, R.O.	Refuge camping
4/1	Ed Doeling, R.O.	L. Alice, water
4/3=	Bill McClure, GMA, Rismarck	Courtesy call
4/10	Glen Sherwood, NPWRC, Jamestown	Goose mgt, L. Alice hunter survey
4/17	"	"
5/8	Dave Umberger, Reg. Eng.	L. Alice pwr line to structure

5/21	John Winship, R.O.	Easement refuges pair count
5/22-3	Merrill Hammond, Bill Bair	Pr counts & ecol. data, WPA's
6/12	John DeGrazio, Olin Bray	Courtesy call
	Denver WRC	
6/23	John Jones, Mingo JCCC	Courtesy call
7/24	Leon Borstad, Ft. Totten	Econl use request, haying
9/12	Mr. Robertson, DVM, USDA,	Discuss Brucellosis testing, bison
	Jamestown	
9/25	Bob Fields, Rod King, Salyer	Refuge tour, discuss big game
	NWR, Bill Bair, Towner Biol.	handling facilities.
10/8	Earl Eliason, R.O.	Qtrs survey
10/11-13	Ralph Fries, Coleharbor W.O.,	Enforcement duty
	Marv Mansfield, Slade NWR	
11/13	Dick Johnston, R.O.	L. Alice, pwr inspection
12/11	Dick Fjelland, BIA	Bison carcass for tribe
12/18	Dr. Prior, Devils L.	Bison vaccination (3)
12/24	Vic Hall, Jim Heinecke	Xmas bird count

C. Refuge Participation.

1/4	Gilbert	Ft. Totten	Fed. agency coordination meeting
1/5	"	"	Movies, talk for NYC's (20)
2/8-10	"	Gr. Forks	Statistics workshop, W.L. Soc.
3/3	"	S. Hill	Church couples club
3/25	"	Ft. Totten	St. & local NYC supervisors
3/28	Gilbert, Marv	Devils L.	Dis. camping w/C of C & Park Bd.
	Duncan, R.O.		
4/5	Gilbert	Rugby	Garrison Conserv. Dist. meeting
6/11	"	S. Hill	4-H group (20)
6/21	"	Ft. Totten	NYC slide talk (90)
6/26	"	S. Hill	Tour, Ft. Totten School (30)
8/16-17	"	Sheyenne	
		Grasslands	W.L. Soc. meetings, tour
8/19-22	Nelson	Madison, Wis.	Enforcement training school
8/26-29	Gilbert	"	"
9/9	"	Sheyenne	
		Grasslands	Grass mgt tour
11/7	"	Arrowwood	Grass mgt, burning

Frequent opportunities for discussion of Bureau programs arise in routine daily visitor contacts and community associations. Gilbert was active in the Devils Lake Lions Club, Civil Air Patrol, church couples club & board of trustees. Nelson is past Noble Grand of IOOF and has joined the 400 strong "Sons of Norway" in Devils Lake.

D. Violations. None prosecuted at Sullys Hill. A few speeders were warned or asked to leave. A "Beverages No Permitted" plank was added to the tour route regulatory sign in 1968. Surprisingly, it, or some other factor, greatly reduced littering from 1967.

Numerous cases were made in the areas of Easement Refuges, particularly on overlimit Canada geese, by BSEW personnel and State Wardens. We do not have data on the cases.

E. Safety. The station had no personnel injuries during the year. One minor vehicle accident occurred - our 4 x 4 rolled away and bumped a tree. Repair was made in refuge shop. (Accid. rep. 10/28).

In October the windshield on our carry-all was broken by gravel from the top of an un-tarped truck. A claim, submitted by R.O., is still pending.

Several station safety meetings were held, primarily on driving techniques. Because of constantly changing NYC personnel, most safety items are better handled on a day to day basis. Hazards were discussed as each new project was begun, or new equipment operated.

A very large Cottonwood tree in the recreation area was reluctantly removed when the main trunks began to split. Walks and landings were added at both shop-office doors, eaves troughs added over them. Hqs-rec area water supply was tested monthly by PHS, Ft. Totten. All tests were satisfactory. Removal of several pit toilets, fending of disposal pit at Q-2 brought us a step nearer to conformance with WPCA standards. Additional work is budgeted for F.Y. 1970. A new lawn tractor, purchased in 1968, will make mowing a little safer.

VI Other Items

A. Items of Interest. The student hired for the summer did not appear. Subsequent efforts for a replacement were unsuccessful. In one way, our NYC's, dis-interested and un-dependable as they were, saved the day. However, necessary close supervision of their work required much time away from other duties.

Technician Nelson, exhibiting patience and perseverance, deserves much credit for work accomplished and training received by the NYC's.

B. Credits.

Gilbert . . . Entire report.

NORTH DAKOTA EASEMENT REFUGE DISTRICT # 2

Lake Alice (Lac Aux Mortes)	Pleasant Lake
Buffalo Lake	Rock Lake
Brumba Lake	Sibley Lake
Johnson Lake	Silver Lake
Lamb's Lake	Snyder Lake
Little Goose Lake	Wood Lake Marsh

Lake Alice

Water. Very low levels prevailed during the year. The lake had been drawn down for construction of new outlet structure, completed in 1967. Spring '68 flow was small, raising the lake level one foot, to 1441.8', well below the proposed summer level of 1442.5'.

Levels declined through the summer. Cool, rainy weather in August prevented the feared outbreak of Botulism, often associated with the area in the past.

Several August rains of up to 4" finally saturated the ground, and flow into the lake began, raising our hopes for 1969. However, the small, silted inlet channel, clogged with a summer's emergent growth, could not handle even the small flow. Water began spreading on private land. Pressure was brought on the State Water Commission to ask us for a release from Lake Alice to improve flow.

The Commission agreed a release would help little, if any, but at the urging of local water manager Gordon Berg, asked for the release. Our gates were opened, allowing water to level with Lake Irvine, at a very low 1440.2' by freeze-up. (Proposed winter level is 1441.5'.)

Heavy snow cover this winter now assures water for refill, and probable flooding in the spring. However, a light snow cover could just as well have brought on a Botulism disaster instead.

Waterfowl. See Sullys Hill Report.

The aerial pair count, May 21, indicated a record 428 pairs at Lake Alice, and a near record 1172 for all easement refuges. Frequently, production figures for the easement refuges are inverse to those for the general area. Thus, these permanent water areas are doubly important in lending stability to the total area in lean (dry) years.

The total duck population of Lake Alice during the July 23 brood count was estimated at 10,000. Pilot Winship said this was much higher than he had seen before, during his several years of counting the area.

Total duck use days are estimated at 5,000,000. Use estimates for the easement refuges are based on counts and estimates during the year, projected on the basis of that percentage of total use at Sullys Hill occurring during the same count weeks.

18,000 Snow & Blue and 2000 Canada geese were observed April 1. Fall geese were variable as they traded in and out. Peak census was 30,000 S & B and 2000 Canadas, October 26.

Buffalo Lake. Summer fishing was reported very good, with Northern pike in the 8 - 10 lb class being common. The status of the cooperative project for raising water level is unknown. BSW is not involved. Our water right is not affected since higher levels will result.

A National Guard project during the summer expanded the recreation area on the east side, including trails and a very large parking ramp overlooking the lake. The exposed steep clay banks were left unprotected, resulting in very serious gully erosion on the several acres.

Total estimated duck use days are 365,000.

Brumba Lake. A ground pair count was made on May 23, following the aerial count, May 21. The small NE arm of the lake is not counted from the air because of an adjacent turkey farm.

Aerial count - 13 pairs.

Ground count - 77 pairs. Three Sora rails and 1 pair Fared grebes were also noted. Total ducks were 172.

Mallard	19	Redhead	9
Gadwall	22	Can. back	4
Baldpate	2	L. Scaup	1
HWT	20	Ruddy	8
Shoveler	1		22
Pintail	1		
	55		

Total estimated duck use days are 165,000.

Snyder Lake. Also ground counted.

Aerial pair count, May 21 - 74 pairs.

Ground count, May 23 - 118 pairs + 33 flocked pairs. Total ducks - 340.

Mallard	17	L. Scaup	3
Gadwall	34	Ruddy	1
Baldpate	3		4
GWT	3		
HWT	31		
Shoveler	7		
Pintail	19		
	114		

Also noted were 10 pair Avocets, 3 pair Willets, 1 pair M. godwit, 4 pair Horned grebe. Fresh beaver cutting.

Total estimated duck use days are 380,000. 800 Snow & Blue and 25 Canadas were observed October 26.

Johnson Lake. A permit was issued to Kenneth Comer for removal of nuisance beaver during the summer.

Total duck use days estimated were 480,000. 40 W. grebes were seen May 11.

Lamb's Lake. Total duck use days are estimated at 190,000.

An 80 acre tract of the refuge was purchased as a WPA in 1965. It is now being transferred to us from the wetlands manager.

L. Goose Lake. No waterfowl at all were seen on the July 23 aerial brood count. Total estimated duck use days are 18,000.

Pleasant Lake. Total estimated duck use days are 320,000. No eagles were observed on the area this year.

A 103 acre WPA tract, purchased in 1963, is now being transferred to us.

Rock Lake. 30 Canada geese, 10 W. swans were observed, September 28. On October 26, 11,000 Snow & Blue geese were seen from the air.

Total duck use days are estimated at 2,400,000.

Sibley Lake. 500 Canvasbacks were observed October 26. Total duck use days are estimated at 400,000.

120 Small Canada geese were present May 11.

Silver Lake. This small lake held good goose number and provided considerable hunting during the fall. 4000 S & B, 500 Canada geese were observed October 19; 1500 S & B, 2200 Canadas, October 26.

2000 ducks, largely divers, were observed May 11. Total duck use days are estimated at 1,000,000.

Wood Lake. Duck use days are estimated at 20,000.

1968 Impoundment Data, Lake Alice

	Ave Elev	Water Depth	Area (acres)	Capacity (A-ft)
Dec 67	1440.3	1.3	1710	2080
Mar 68	1440.8	1.8	2060	2920
Apr	1441.2	2.2	2340	3890
May	1441.8	2.8	2780	5430
Jun	1441.2	2.2	2340	3890
Jul	1441.0	2.0	2200	3380
Aug	1440.8	1.8	2060	2920
Sep	1441.0	2.0	2200	3380
Oct	1440.8	1.8	2060	2920
Nov	1440.2	1.2	1650	1900

1968 Water Depth on Refuges in Easement District #2

	Outlet	Freeze-up '67	May '68	Sep '68
L. Alice	0"	20"	34"	24"
Brumba L.	41	21	35	42
Buffalo L.	UKN	75	93	83
Johnson L.	None	63	71	71
Lamb's L.	None	43	52	45
Little Goose L.	116	80	116	98
Pleasant L.	42	20	32	22
Rock L.	59	28	30	51 (52 Oct)
Sibley L.	None	27	44	43
Silver L.	UKN	26	34	30 (est)
Snyder L.	131	102	115	111
Wood L.	76	70 (est)	76 (est)	72 (est)

Breeding Pairs and Lone Males (Ducks)

	<u>1965</u> (5/19)	<u>1966</u> (5/17)	<u>1967</u> (5/24)	<u>1968</u> (5/21)
Lake Alice	229	161	142	428 50% Redhead, 20% Ruddy
Brumba Lake	23	23	24	13
Buffalo Lake	36	38	17	55 1 Pelican
Johnson Lake	55	49	52	54 6 Pelicans, 6 pr. W. grebes
Lamb's Lake	26	27	44	75
Little Goose Lake	9	6	10	11
Pleasant Lake	31	51	13	55 Algae bloom
Rock Lake	102	151	124	147 4 pr. W. grebes
Sibley Lake	67	57	44	93 50 Scaup, etc.
Silver Lake	30	56	65	130
Snyder Lake	59	85	22	74
Wood Lake	<u>9</u> 676	<u>4</u> 708	<u>1</u> 625	<u>8</u> 1172

Total Coots

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Lake Alice	940	256	280	1150
Brumba Lake	12	23	9	
Buffalo Lake	30	10	5	
Johnson Lake	24	2	29	
Lambs Lake	48	31	30	150
Little Goose Lake	8	2	9	3
Pleasant Lake	120	13	7	100
Rock Lake	318	42	130	
Snyder Lake	90	14	4	
Sibley Lake	32	34	182	100
Wood Lake	2	-	1	
Silver Lake	<u>16</u>	<u>17</u>	<u>98</u>	<u>30</u>
	1640	444	784	1533

Aerial Brood Census

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u> (7/23)	
Lake Alice	58	73	90	175	Green algae
Brumba Lake	3	3	3	5	
Buffalo Lake	7	18	14	21	
Johnson Lake	4	18	12	15	400 coot
Lambs Lake	4	22	7	19	100 coot
Little Goose Lake	-	3	-	-	no ducks
Pleasant Lake	8	3	7	22	20 Pelicans, 150 coot
Rock Lake	13	21	23	53	
Sibley Lake	5	46	16	24	200 coot
Silver Lake	7	9	14	29	Green fil. algae (?) on shore
Snyder Lake	5	18	10	8	20 Pelicans
Wood Lake	<u>2</u>	<u>1</u>	<u>1</u>	<u>4</u>	
	116	235	197	375	

Submitted by:

David L. Gilbert

March 14, 1969

David L. Gilbert
Refuge Manager

Approved, Regional Office:

Date: **MAR 19 1969**

J. Carlson

45313 Regional Refuge Supervisor



Refuge manager Gilbert, wife Marilou, sons
Chadwin, 4, Erich, 11 months.
Feb. 69, Gilbert



Wildlife technician Nelson, wife Dorothy, Lu Anne,
H.S. sophomore, Darryl, NDSU senior, secondary
education, biology major.



Reservation youths in Neighborhood Youth Corps
mass produced 177 Belrose duck boxes, turned
over to NPWRC, Jamestown for distribution.
3/68-12, Gilbert, Mar. 16



Self threading hex head screws and special
hardened driver bit were purchased from
local sheet metal company.
3/68-16, Gilbert, Mar. 16



One of two calves born late in July. The cow died in September. The calf, a runt from lack of milk, also succumbed, with the first -30° weather in December.

8/68-5, Gilbert, July 21



Visitors enjoy the Canada geese on Sweetwater Lake in the recreation area.

7/68-12, Gilbert, July 7



Brood "snatching" is common in Canada geese. In this case the rightful mother of part of the brood stayed with them most of the summer. The other male usually trailed 50 feet away. Gilbert



"Big daddy" was 10 years old in 1968. Gilbert



Summer herd totaled 39, with the 11 calves.
Sullys Hill in background.

Gilbert



1968 was our first year for use of the 6 bay
control structure at Lake Alice.
9/68-2, Gilbert



Job superintendent Adams demonstrates elec
gate lifter, a 75 rpm "Thor" car-mover. It
works very well.

9/68-0, Gilbert



The lifter also adapts to operate the slide gates. Hand cranking the very low geared spindles is an extremely slow process.

Gilbert



Deep cut drains former type IV into Mauvais Coulee. Drain is legal under state law despite serious flooding downstream. Ironically this one is a total loss - not dry enough to farm either.

9/68-7, Gilbert

A restful Sunday Drive



Probably nothing can be more relaxing than a peaceful Sunday afternoon ride in North Dakota in the autumn, with its variety of trees, plants, lakes and hills, together with wildlife. These photos are the result of one of those Sunday afternoon rides prior to the first snowfall, showing some of the highlights at Sully's Hill National Game Preserve near Fort Totten.

Top photo is at a favorite stopping off point on the Bison Trail, a four-mile self-guided trip through the preserve. This is the Devils Lake Vista, an overlook area where one can view Devils Lake and the city of the same name in the distance. Further on up the trail, one comes to Sully's Hill, named for General Alfred Sully, who led several Indian campaigns following the "Minnesota massacres" of 1862. After a report of hostile Indians, he visited this area in 1865, camping near Minnewaukan on the west shore of Devils Lake. Finding no Indians, he left the area after a few days. Among other features on the trail are pre-historic Indian mounds and the Fort Totten Vista, where one can view the old fort and surrounding community.

Second photo shows the entrance to the scenic tour route, which is supervised by the U. S. Department of Interior's Bureau of Sport Fisheries and Wildlife.

Photo No. 3 shows travelers feeding the geese at Sweetwater Lake, en route to the Bison Trail. The calm of this Sunday afternoon is evident on the restful lake, which is encircled by a scenic road, and which has picnic and playground facilities.

Photo No. 4 shows another view of the lake, with a Fish and Wildlife Service bulletin board in the foreground explaining in detail some of the animal and bird life to be found in the preserve.

Among the many types of wildlife on the preserve is a herd of buffalo, shown in photo below lazily grazing in the warm sunshine. Such other animals as deer and elk can also be seen on the preserve.

SULLYS HILL NATIONAL GAME PRESERVE
Fort Totten, North Dakota

"BISON TRAIL"



The route is about 4 miles long--20 minutes at 15 MPH.

DANGER! Animals are unpredictable and very quick.

Beverages are not permitted in enclosure.

1 *BUFFALO WALLOW.* Usually dry by early summer, this pothole is an excellent spot for rolling and dusting. Many other "wallows" are visible along the trail.

2 *DEER POND.* White-tailed Deer are often seen near this pothole, especially in evening. Unlike Bison and Elk, Deer do not remain together in a herd. One to six of their flashing white tails may be seen anywhere in the woods.

Mallard ducks also use these secluded ponds during the spring.

3 *OAK-ASH WOODS.* Other kinds of trees pointed out are Box Elder, Aspen, American Elm, Paper Birch. Note the changes in kinds of plants along the tour.

Several kinds of "plant communities" may be seen on the refuge. On ridges and south slopes short grasses like Blue Gramma are dominant. Taller grasses and brush occur in meadows. Oak and Ash trees of the north slopes change to Elm and Basswood on the valley floor. Ground temperature, moisture and amount of light vary with different exposure to the sun. Each site favors a different group of plants.

4 *FORT TOTTEN VISTA.* (Park on right shoulder. Walk through opening.) White buildings at left are the old cavalry fort, now a State Park. The original log fort stood about 1/2 mile north, near the church. Steamships used to dock in the now marsh bay area below.

5 *BURNED AREA.* A small fire to the right was caused by a careless smoker in 1967. Because he had driven off the main route, the fire was not seen until the next day. Luckily, the wind direction pushed the fire toward the road instead of down the grass slope beyond the ridge. Our few regulations protect the area for you. Please observe them.

6 *ELK.* Are often seen in the next 1/4 mile. They are easily told from the Deer by their large size and buff-colored rump patch.

7 *DEVILS LAKE VISTA.* The City of Devils Lake is visible across the lake. The lake has dropped about 30 feet during the past 100 years, apparently due to climatic changes. Under the Garrison irrigation diversion from Lake Sakakawea (100 miles west), water will feed into Devils Lake, raising it 15 to 20 feet above its present level.

8 *MALLARD POOL.* The best of our temporary ponds, this pothole is used by duck pairs every year. Waterfowl often do not produce ducklings unless these isolated areas for courtship can be found. When the brood is hatched, the pond is usually dry. The hen simply marches her young to permanent water for rearing.

9 *BISON LOAFING SPOT.* Buffalo are often seen rolling or resting in the depression on the right.

10 *SECONDARY GROWTH WOODS.* Many trees in this valley have several trunks which have grown up from old stumps. Logs for the original Fort Totten were cut here 100 years ago.

11 *CLAY EXCAVATION.* Bricks for the present Fort were kilned here on the north slope of Sullys Hill and floated across the bay on barges.

12 *MEADOW GRASSLAND.* Both Bison and Elk are primarily grazing animals. Patches of Buckbrush, part of the meadow "climax vegetation", are mowed periodically to reduce competition with the grass. Our moderate stocking rate also helps the grass. Over-grazed areas are often infested with brush and less desirable grasses. Animals eat the best plants short, allowing others to take over.

13 *SULLYS HILL.* The hill was named for General Alfred Sully, who led several Indian campaigns following the "Minnesota massacres" of 1862. After a report of hostile Indians, he visited this area in 1865, camping near Minnewaukan on the west shore of Devils Lake. Finding no Indians, he left the area after a few days.

Sullys Hill is the high point of the general area (1735 feet MSL), rising about 330 feet above the lake. Three burial mounds are located at its summit.

14 *PRE-HISTORIC INDIAN BURIAL MOUNDS.* The mound at right is typical of 8 such mounds found in the enclosure. They are thought to be about 600 years old. Similarity of construction indicates a link with the mound builders of New Mexico. These mounds, however, have a log rather than stone tomb. The logs have long since collapsed, leaving the depression in the top. Little is known of these people and how they may relate to historic tribes.

15 *CORRAL.* The corral is used primarily for Brucellosis vaccinating of Bison calves. The herd is lured in with grain-molasses cubes used as supplemental winter feed. Hay for winter feeding is cut on another part of the refuge by local operators, who receive a share of the harvest. On areas of sufficient grass acreage, hay feeding is not necessary. Native grasses "cure on the stem", retaining much of their nutrient value.

WATER FOWL

REFUGE Sullys Hill Preserve

MONTHS OF Jan TO Apr, 1968

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
<u>Coot:</u>										

3-175

Cont. No-1

(Rev. March 1953)

WATERFOWL

(Continuation Sheet)

REFUGE Sallys Hill PreserveMONTHS OF Jan TO Apr, 1968

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	3/16	23	30	4/6	13	20	27	18		
Swans:										
Whistling					3	20	40		500	
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard			4	24	14	12	26		600	
Black										
Gadwall					2	20	30		400	
Baldpate				2		30	50		600	
Pintail				2					100	
Green-winged teal				2	10				100	
Blue-winged teal						12	10		200	
Cinnamon teal										
Shoveler					2	40	120		1200	
Wood										
Redhead						10	30		300	
Ring-necked										
Canvasback						6	22		200	
Scaup						100	6		800	
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:							12		100	
			4	28	28	174	236			
						116	58			
						230	294			
				(over)						

Lab Lot
chew

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	40	500	
Geese	-		
Ducks	4500	300	
Coots	100	12	

SUMMARY

Principal feeding areas Ft. Totten bay.

Principal nesting areas _____

Reported by David L. Gilbert

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

WATERFOWL

REFUGE

MONTHS OF

TO Aug

1968

Coot:

Int. Dup. Sec., ^{was to} ~~divers~~

Wash., D. C. 37944

3-1750a

Cc NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Sullys Hill PreserveMONTHS OF May TO Aug., 1968

(1) Species		(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
		7/13	20	27	8/3	10	17	24	31			
		11	12	13	14	15	16	17	18			
Swans:												
Whistling										200		
Trumpeter												
Geese:												
Canada												
Cackling												
Brant												
White-fronted												
Snow												
Blue												
Other												
Ducks:												
Mallard		14	32	35	110	90	135	96	98	6,000	5	40
Black												
Gadwall		20	12	20	30	20	30	60	120	4,000		
Baldpate		10	4		20	20	30	10	20	1,200		
Pintail		10		20	30	202	30		10	1,000		
Green-winged teal										200		
Blue-winged teal		12	10		20	24		34	44	2,000		10
Cinnamon teal												
Shoveler						10	20	6		1,100		
Wood						6	9		6	200	1	5
Redhead		30	20	15	15	10	20	20	10	1,500		
Ring-necked												
Canvasback		8	8	4	10	4	10		10	500		
Scaup									20	1,000		
Goldeneye												
Bufflehead												
Ruddy				10	10		20		40	15		
Other										600		
Coots:												
										300		
Sub total		66	58	75	210	180	234	206	298			
Grand total		38	28	29	35	14	50	20	80			
		104	86	104	245	194	284	226	378			

	(5)	(6)	(7)		SUMMARY
	Total Days Use :	Peak Number :	Total Production :		
Swans	200	16		Principal feeding areas	<u>Ft. Totten bay (Devils Lake)</u>
Geese	(captive)	35	10		
Ducks	19,300	400	55	Principal nesting areas	<u>Woods clearings</u>
Coots					
				Reported by	<u>David L. Gilbert</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.

1953

3-1750

Form 1

(Rev. March 1953)

WATERFOWL

REFUGE Sallys Hill PreserveMONTHS OF Sep. TO Dec., 19 68

(1) Species	(2) Weeks of reporting period									
	9/7	14	21	28	10/5	12	19	26	11/2	9
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling			75	150	120	60	60	60		
Trumpeter										
Geese:										
Canada (Small)					300					
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	120	80	110	150	130	220	160	100	26	
Black										
Gadwall	150	200	160	120	80	60	60	60		
Baldpate	30	40	50	60	100	80	140	200		
Pintail	10	10	15	20	20	20	20	20		
Green-winged teal										
Blue-winged teal	50	40	40	40	35			4		
Cinnamon teal										
Shoveler	10		100	300	100	30	90	150		
Wood	6									
Redhead	10	10	40	60	20	20	20	20		
Ring-necked										
Canvasback		20	20	30	30	10	10	10		
Scaup					300	300	450	600		
Goldeneye										
Bufflehead					12	20	10	8		
Ruddy	120	150	150	150	120	40	20			
Other										
Total	506	550	685	930	947	720	980	1172	26	
Coot:	376	370	475	30	465	410	470	534	26	
	130	180	210	690	482	390	510	638		
	506	550	685	240						

Int. Dup. Sec.,
Wash., D. C. 37944

(Rev. March 1953)

WATER OWL
(Continuation Sheet)

MONTHS OF **Sep.** TO **Dec.**, 19 **68**

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production	
	11	12	13	14	15	16	17	18	waterfowl days use	Broods: Estimated	seen: total
Swans:									3700		
Whistling											
Trumpeter											
Geese:											
Canada	NONE										
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard									7700		
Black											
Gadwall									6200		
Baldpate									1900		
Pintail									900		
Green-winged teal											
Blue-winged teal									1100		
Cinnamon teal											
Shoveler									5500		
Wood									40		
Redhead									1400		
Ring-necked											
Canvasback									900		
Scaup									11,500		
Goldeneye											
Bufflehead									360		
Ruddy									5200		
Other											
Coots:									200		

	(5)	(6)	(7)	SUMMARY
Coops: Total Days Use :		Peak Number :	Total Production	
Swans	3700	150		Principal feeding areas <u>Ft. Totten, Bay of Devils Lake.</u>
Geese	2000	300		
Ducks	46,000	1200		Principal nesting areas
Coots	200	30		
				Reported by <u>David L. Gilbert</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.

1953

3-11204

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill Preserve

Months of Apr Jan to Apr 19568

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u> <u>Killdeer</u>	1	4/12	2	4/25						4
II. <u>Shorebirds, Gulls and Terns:</u> <u>R-b gull</u> <u>Frank. gull</u>	1 12	3/30 4/25	20 12	4/19 4/25						25 20
III. <u>Boxed and Blended:</u>										

(over)

(1)	(2)		(3)	(4)	(5)			(6)
III. <u>Doves and Pigeons:</u>								
Mourning dove	1	4/25						20
White-winged dove								
IV. <u>Predaceous Birds:</u>								
Golden eagle								
Duck hawk								
Horned owl	Often heard							6
Magpie								
Raven								
Crow	1	3/8						20
Red-t hawk	1	4/1						1
Spar. hawk	1	4/1						1
Reported by <u>David L. Gilbert</u>								

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge Sullys Hill PreserveMonths of May to Aug 195 68

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
D-e cormorant	7	5/17	8	7/15						
B-c-a heron	3	5/24			2	7/5				
B. kingfisher	2	5/24			2	8/31				
G-b heron	1	8/31								
II. Shorebirds, Gulls and Terns:										
R-b gull	10	5/24	20	6/21						
Frank. gull			800	5/10 (Unit II)						
Bl. tern	12	5/10	32	8/17	32	8/17				
Com. tern	3	8/17			3	8/17				
Avocet	2	5/10	3	8/31	3	8/31				
Killdeer	2	5/24	12	7/13						
G. yel. legs	7	8/24								
L. yel. legs	16	5/31			7	8/31				
M. godwit	2	6/28	6	8/24	6	8/24				
Willet	2	7/5	2	7/13	2	7/13				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons</u> :					
Mourning dove	2	5/10	Common		
White-winged dove					
IV. <u>Predaceous Birds</u> :					
Golden eagle					
Duck hawk					
Horned owl			Heard thru season		
Magpie					
Raven					
Crow		80	8/2 (Unit II)		
Reported by.....David L. Gilbert					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned

3-17

Form MA-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Sullys Hill PreserveMonths of Sep. to Dec. 19568

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Dps cormorant			1	9/6	1	9/6				
G-b heron			1	9/6	1	9/6				
II. <u>Shorebirds, Gulls and Terns:</u>										
R-b gull			200	10/11-25	200	10/25				
P. gull			500	10/11	500	10/11				
G. Yel. legs			6	9/13	6	9/13				
Killdeer			6	9/6	2	9/13				
III. <u>Doves and Pigeons:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					
IV. <u>Predaceous Birds:</u> Golden eagle Bald Duck hawk Horned owl Magpie Raven Crow	2	11/22	2	11/22	2
		4 est 20 est	Heard occasionally 10 est	winter resident	
			2	winter resident	
Reported by <u>David L. Gilbert</u>					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- Total: Estimated total number of the species using the refuge during the period concerned

3-1750b

Form NR-1B

(Rev. Nov. 1957)

UNITED STATES

DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Sullys HillFor 12-month period ending August 31, 1968Reported by David L. GilbertTitle Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
Crops	30	Ducks 177,800	60	55
Upland	1170	Geese -	(captive-25)	10
Marsh	15	Swans 4,800	-	-
Water	160	Coots 20,100	-	-
Total	1675	Total 202,900	85	65
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		
Crops		Ducks		
Upland		Geese		
Marsh		Swans		
Water		Coots		
Total		Total		

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: AA geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity ~~apart~~ from other areas in the refuge census pattern. The combined estimated acreages of all units should be equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

(April 1946)

1613

Months of Jan to Apr, 19468

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specificoally requested. List introductions here.
R-n pheasant	Total acres 16,74 700 Acres of marsh and timbered pas- ture. Remainder is open pasture and hayland.					Unknown	None seen
S-tail grouse	"					6	None seen
Gray partridge	"					6	None seen

INSTRUCT. 15

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752

Form R-2

(April 1946)

UPLAND GAME BIRDS

1613

Refuge Sullys Hill PreserveMonths of May to Aug, 19468

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
R-n pheasant	Total acres 1,674. 700 Acres of marsh and timbered pas- ture. Remainder is open pasture and hayland.									None seen.
S-t grouse	"		1	15					20	
G. partridge	"		1	15					20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752

Form R-2

(April 1946)

UPLAND GAME BIRDS

1613

Refuge Sullys Hill PreserveMonths of Sep. to Dec., 19468

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acre per Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
S-t grouse	Total acres 1674. 30 acres crop. 50 acres marsh & low land. 510 acres open hay & pasture. Remainder mainly timber.							20	
G. partridge	"		1 15					20	

INSTRUCT. AS

2-1782
R-2
(April 1946)

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
Amer. bison	700 A. enclosure. Timber & brush on large rolling hills. Approx. 250 A. grass.	11			6			1	1		39	31	7:1
Elk	"	10			7			1			30	22	6:1
W-t deer	"	8			5				1		30	25	1:1

Remarks:

* Donated to N.D. Deaf School, Devils Lake.

Reported by David L. Gilbert

INSTRUCTIONS

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area or cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-17
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Sullys Hill Preserve

Year ending April 30, 1968

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula tion	
Common Name	Cover Types & Total	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
	Acreage of Habitat							Permit Number	Trappers Share	Refuge share				
Muskrat	30 acres of wetlands incl. Sweetwater L.	7.4												4
Mink	"	7.5												4
Weasel	1674 acres timber & grassland.	420												4
Raccoon	"	67												25
Woodchuck	"	210												8
Gray tree sq.	"	28-												60
Fox squirrel	"	56												30
Franklin gr.sq.	"	170												10
13 line gr. sq.	"	42												40

List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Sallys Hill Preserve

Year ending April 30, 68

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula tion	
Common Name	Cover Types & Total	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
	Acreage of Habitat	Permit Number						Trappers Share	Refuge share					
Pocket gopher	1674 acres timber & grassland.	56												30
Cottontail	"	67												25
Striped skunk	"	280												6
Red fox	"	210												8
Gray fox	"	840												2

(1) - DISPOSITION OF FUR

(2) - REMOVALS

(3) - REMOVALS

(4) - REMOVALS

(5) - REMOVALS

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

One gray fox seen, Nov. 67.

Reported by David L. Gilbert

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

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- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1750
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Sallys Hill Preserve

County Benson

State N. Dak.

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Barley		800 bu		400 bu			30		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 2 (Hay perm) Haying Operations 4 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	77 (11 stk)	90	7 (1 stk)	1. Cattle	25	100	245.00	160
Alf-brome	42 6	80	14 2					
Alf-native	42 6	40	-	2. Other				
Brome	21 3	43	21 3					
Native	28 4	40	28 4					
				1. Total Refuge Acreage Under Cultivation				30
Hay - Wild	25 3/4	6	\$90.00	2. Acreage Cultivated as Service Operation				-

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

Refuge Sallys Hill PreserveMonths of Jan through Dec, 195

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	None	400	400			150	150	250		250	None
Corn	100	-	100			30	30	60		60	-
Oats	200	-	200			200	200	-			
Millet	50	-	50			50	50	-			

(8) Indicate shipping or collection points _____

(9) Grain is stored at preserve hqs. _____

(10) Remarks _____

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.